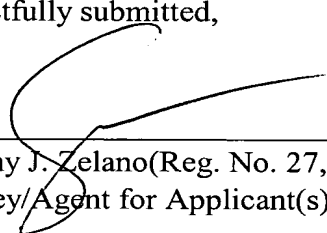


REMARKS

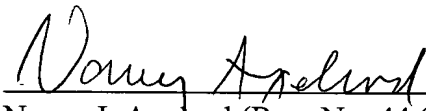
The newly added claims are fully supported in the specification and do not add new matter.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

5. (Amended) An avirulent *M. marinum* bacterium, in which one or more genes comprising a nucleic acid of SEQ ID NOs: 4, 6, ~~8, 10, 11~~, 13, ~~21~~, 23, 25, ~~27, 29~~, or 31, ~~35, 39, 41, 43~~ or 44 is mutated.

9. (Amended) An avirulent *M. tuberculosis* bacterium, in which one or more of genes Rv0822c, ~~CY20G9.23 (Rv0497)~~, the pks family, including e.g., ~~ppsE (Rv2935), psk6 (Rv0405), pks9 (Rv1664), pks8 (Rv1662), pks1 (Rv2946c), and pks002c, Rv3511, O08381 (Rv0357c), Rv3775, Rv3137, or Rv2348c, Rv3860, mbtB (Rv2383c), Rv2181, Rv1954c, Rv0987, Rv3268, Rv2610c, mrp (pir E70751, Rv0101), mbtE (Rv2380c), Rv0236c or smc (Rv2922c)~~ is mutated to render the *M. tuberculosis* bacterium less virulent.